

# Claims

- [c1] 1. A method of fabricating cell detection chip, comprising:  
designing a plurality of probe molecules, wherein an affinity exists between each of the probe molecules and one of corresponding specific molecules on a cell membrane;  
synthesizing a plurality of the probe molecules; and  
spotting the probe molecules respectively on a matrix.
- [c2] 2. The method as in claim 1, wherein the specific molecules comprises at least one from a group consisting of antibodies and antigens.
- [c3] 3. The method as in claim 1, wherein the step of designing the probe molecules further comprises designing a plurality of quality control probes.
- [c4] 4. The method as in claim 1, wherein the step of designing the probe molecules further comprises a plurality of location indication probes.
- [c5] 5. The method as in claim 1, after the step of synthesizing the probe molecules, further comprising the step of dissolving the probe molecules in a solvent to form a so-

lution of the probe molecules.

- [c6] 6. The method as in claim 1, after the step of spotting the probe molecules, further comprising the step of incubating the matrix to keep the matrix under a wet environment.
- [c7] 7. The method as in claim 6, after the step of incubation, further comprising the steps of:  
drying the matrix; and  
cleaning the matrix.
- [c8] 8. The method as in claim 7, after the step of cleaning the matrix, further comprising the steps of:  
blocking portions of a surface of the matrix not spotted with the probes, wherein a blocking solution is used; and  
further cleaning the matrix.
- [c9] 9. The method as in claim 1, wherein a radius of the spotted probe is between 50 and 500  $\mu\text{m}$ .
- [c10] 10. A microarray detection chip applicable to detecting a plurality of specific molecules on a cell surface, comprising:  
a plurality of probes immobilized on a matrix, wherein an affinity exists between each of the probes and one of corresponding specific molecules on the cell surface.

- [c11] 11. The microarray detection chip as in claim 10, wherein the specific molecules comprise at least one from a group consisting of antibodies and antigens.
- [c12] 12. The microarray detection chip as in claim 10, further comprising a plurality of quality control probes immobilized on the matrix.
- [c13] 13. The microarray detection chip as in claim 10, further comprising a plurality of location indication probes immobilized on the matrix.
- [c14] 14. A method of cell detecting applicable to detecting a plurality of specific molecules on a surface of a cell membrane, comprising:  
providing a microarray detection chip as in claim 10;  
obtaining a biological sample from a patient, wherein the sample comprises a plurality of free cells;  
carrying out a cell reaction to react the probes on the microarray detection chip with the specific molecules on the cell surface;  
fixing the free cells on the microarray detection chip;  
and  
analyzing the microarray detection chip.
- [c15] 15. The method of cell detecting as in claim 14, after carrying out the cell reaction, further comprising several

cleaning steps to clean the microarray detection chip.

- [c16] 16. The method of cell detecting as in claim 14, wherein the microarray detection chip further comprises a plurality of quality control probes immobilized thereon.
- [c17] 17. The method of cell detecting as in claim 14, wherein the microarray detection chip further comprises a plurality of location indication probes immobilized thereon.
- [c18] 18. The method of cell detecting as in claim 14, between the step of cell reaction and the step of fixing the free cells, further comprising the step of observing results of the cell reaction.
- [c19] 19. The method of cell detecting as in claim 14, wherein the step of analyzing the microarray detection is of rule staining, immunohistochemistry staining, in-situ hybridization, cell culture, or drug analysis.
- [c20] 20. The method of cell detecting as in claim 14, wherein the biological sample is pleural fluid, ascites, urine, or blood.